

UTILITY VERSUS BEAUTY.

INSTITUTE OF BRITISH ARCHITECTS.

At a meeting on Monday evening, the 13th, Professor Cockrell took the chair. The absence of Professor Donaldson from the recent meetings was explained as caused by illness, and much satisfaction was evinced at the announcement that his health was improving. The business of the evening consisted of an account of the "Britannia and Conway Tubular Bridges," by a third professor, Mr. Cowper, of King's College; who, in a popular and familiar style, described the leading characteristics of these structures. We shall recur to his account on another occasion. In concluding, Mr. Cowper begged to offer a hint for the consideration of the meeting. Looking at the works of engineers and architects, he found that the prevalent idea with the former was utility, whilst the prominent idea with the latter was beauty. The building in Hyde Park, although it looked so slight, was a striking illustration of the elaborate calculations made by engineers in order to combine stability with economy. At the Euston-square railway station there was a magnificent portico, which had cost 35,000*l.* but which he found was not applied to any useful purpose; whilst immediately adjoining it was a very large iron shed, of the greatest possible utility, but with no beauty at all. What he wanted was that the engineers would get some notion of beauty from the architects, and the architects some notion of utility from the engineers. He strongly urged upon architects the importance of recognizing iron as a material to work with, and not to be so averse to it as they now are. Although Wren had objected to the use of iron ties in Salisbury Cathedral, as "contrary to the rules of good architecture," he had himself introduced an iron chain to strengthen the dome of St. Paul's. With such an example before them architects might use a little iron occasionally, without getting into great disgrace. A great deal might be done with it, and he thought the architects ought to do it.

The Chairman acknowledged the claims of engineers on the score of their great and useful works, but urged the importance of that study of the beautiful, united with the useful, to which the architect was specially devoted. He hoped the iron order of architecture would receive that attention from architects which the learned professor had suggested.

Mr. Tite regretted exceedingly the severance which had taken place between architects and engineers. Almost within his own recollection there had been no such distinction between them as now existed, and it was well known that all the great architects of Italy were engineers likewise. He wished to remove from the mind of Professor Cowper, the impression that architects repudiated the use of iron, and did not consider utility. Iron was first used to any extent by architects: he believed Sir Robert Smirke was the first to employ cast-iron bearing beams, and to him also we were indebted for the re-introduction of concrete. In the Walbulla, near Ratisbon, by Von Klenze, and in the roof of the Madeleine at Paris iron was most successfully used, and in the most elaborate manner; and he would also mention as a proof of its recognition by architects, the roof of Mr. Barry's mighty palace of Westminster. It was a foolish mistake to suppose that architects did not calculate the strength of materials. No architect would venture to put a girder across a room, without ascertaining the weight that would come upon it. In the adoption of the iron order, recommended by the chairman, great caution was necessary. In dwelling-houses especially, in such a climate as ours, exposed iron surfaces were highly objectionable, from the condensation of moisture. He knew a chapel where an old lady, sitting beneath an iron girder, found it necessary to put up her umbrella, in consequence of the moisture dripping from the girder. From his own experience of railway matters, he knew there was an inclination to indulge engineers in spending large sums of money; whereas the architect's expenditure was always cut down as low as possible. He had endeavoured to introduce some degree of beauty in the railway shed at Perth; but the nature of these structures rendered it a very difficult task. As to the strength of slender iron columns, the professor's remarks were very true; but a

blow on the side of such a column might bring down the whole structure. Architects did think, and he was sure they did all they could with the limited means at their disposal. Fancy the enormous sum of 760,000*l.* expended on that wonderful structure the Britannia-bridge! Many thousands for the experiments alone! How much might be done in our churches, town-halls, schools, and other buildings, if a similar sum of money were to be spread among the architects of England. They could only wonder at and envy the engineers their good fortune, and live in hope that the day would come when architecture should be thought to deserve as much as engineering, and be as much appreciated. He trusted the architect would at all times labour to make everything that was useful elegant, and that the engineer would aid him in adding that elegance to his usefulness.

The Chairman observed, that the first instance of the use of cast-iron in England was the railing round St. Paul's, by Wren.

Professor Cowper hoped it would not be thought that he was making an antithesis between architects and engineers. He regretted the severance between them, and had always sought rather to diminish than to increase it, having repeatedly urged upon engineers a greater attention to beauty than they now displayed. Science was common to all, and every description of material should be recognised by all as part of the common stock to work from.

The Chairman acknowledged the perfect good humour of Professor Cowper's remarks, and hoped he would regard the observations of Mr. Tite as being offered in the same tone of banter.

Mr. Godwin said he was compelled to remark, that he did not consider it a matter for banter at all. As another description of banter had "laughed Spain's chivalry away," so he could see that the feeling at the bottom of this banter might laugh architecture and architects away. Believing that Professor Cowper represented a very large class, in his sentiments on this subject, he felt bound to characterize opinions which that gentleman had expressed elsewhere on the subject, and in a modified form that evening, as injurious to the profession of architecture. Mr. Cowper had said elsewhere that the engineer was to be looked to for utility and the architect to "make a thing pretty." He had somewhat modified the expression on the present occasion. That was an opinion which he never could allow to be mooted without challenging it. The architect dealt first with "utility," then with "commodity," and then with "delight." Architecture had been defined as the art of the beautiful in building: he could not be contented with this, he would call it the art of building with beauty. It was because some architects had lent themselves to the notion that they were to deal simply with beauty, that they were being gradually shouldered on one side, and were held, he regretted to say, in little consideration by the great body of the public. To allow the public to run away with the idea that architects were only concerned with the beautiful, and had nothing to do with the useful, was, he would venture to say, exceedingly dangerous, and exceedingly untrue. He hoped the lecturer would take these observations in the kindest possible manner, but he could not avoid making them, as he felt very strongly on the subject.

Professor Cowper did not mean to assert that architects dealt only with beauty: he had alluded only to the prominent ideas of engineers and architects; and certainly to judge from the discussions he had heard at the Institute, the prominent idea of the latter was beauty. He again protested against promoting antagonism between the two classes.

Mr. Fowler supported the views expressed by Mr. Tite and Mr. Godwin, and thought Sir C. Wren had been unfairly represented as opposed to the employment of iron. Wren's objection, and a very proper one, was to the use of iron to hold masonry together.

Mr. Roberts adverted to the very extensive use of cast-iron by Sir Robert Smirke at the British Museum, the Post-office, the Custom-house, &c.

Mr. Garling suggested that the father of Mr. P. Hardwick had, he believed, employed

concrete at the House of Correction, Millbank, before Sir R. Smirke did.

Major-General Pauley confirmed the statement that Smirke was the first to use it in anything like its present perfect form; and also to adopt extensively the use of cast-iron girders. The wrought-iron bridges recently erected by Mr. Stephenson would not, he thought, have been introduced but for the failure of the cast-iron bridge over the Dee at Chester. He had recently, with pleasure, defended Mr. Stephenson's claims against the pretensions of a foreigner.

Mr. Tite observed that the only feature which, in his opinion, redeemed the Exhibition Building in Hyde-park from downright ugliness, namely, the arched roof of the transept, was the suggestion of Mr. Barry, and they might therefore claim it on behalf of the architects.

REMOVAL OF FOUL AIR IN WELLS.

In answer to your invitation, I beg to state the following case of actual practice, arising from foul air in a well.

Some time in the latter part of 1840, I was indirectly concerned in the execution of some alterations, &c., carrying on at a mansion near Weymouth, in Dorset, connected with which was the sinking of a well. The men, at the depth of 150 feet, or rather more, were very much troubled with foul air, or carbonic acid gas, which, as they proceeded in depth, increased, till at last they could not work at all.

At this time, my employer was applied to by the owner of the property, by letter, as to the means of getting rid of the evil; and at a consultation, to which I was called, the following method, suggested by me, was considered so feasible, that it was carried into immediate execution, and was completely successful, as the men were enabled by its use to proceed to a depth of 300 feet, at about which depth they arrived at the water.

A pair of small forge-bellows was fixed on a stand near the mouth of the well, to the nozzle of which a zinc pipe (gutta percha was not then in vogue), 1½ inch diameter, was attached, and carried down the side of the well to the bottom of the same; and as the depth increased, fresh pipe was added, so as to keep the mouth of it at or near the men's feet. Thus being done, at any time when the foul air inconvenienced the workers, a few strokes of the bellows at the well's mouth always gave a supply of pure atmospheric air, sufficient to remove the same, and enable the men to proceed with their work till they arrived at the water, as before stated.

I cannot but think that the same principle (using a powerful blowing machine in place of the bellows, together with gutta percha or other tubing), might be applied for the purpose of driving out fire damp from the goafs in coal mines, as the tubing by means of poles or otherwise might be projected into these places, and the foul air removed from thence, which other means of ventilation do not seem to accomplish.

CHARLES GALK.

Reading the inquiry respecting the best method of forcing foul air out of a well, I beg to submit the following to the notice of your readers.

Procure a thick canvas tube, nine inches in diameter, to reach from the top to the bottom of the well, in which may be inserted, at the distance of every eight or ten feet, an iron or wooden hoop to keep open the same: the upper end of the tube to be attached to the nose of a box, containing a fan-wheel, to the axle-tree of which must be fixed a pulley, round which must pass a strap from a large multiplying wheel, which, being turned, will impart to the fan-wheel a rapid rotary motion, the effect of which will be to force sufficient pure air out of the well.

I have tried this experiment in a number of similar cases, and never found it to fail.

HENRY STONE.

Allow me to submit to you some recommendations of practical utility, having paid attention to the subject for many years, and submitted the question to oft-repeated experiment. These recommendations are entirely